

Wescott (C. D.)

REPORT OF A CASE OF
Sudden Death from Coronary Obstruction

WITH SPECIMEN.

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The woman whose heart I show you I saw but twice during life, and her history as obtained from herself and mother is not very satisfactory. But the heart is so interesting and tells its own story so plainly that I am glad to be able to present it. The patient was only twenty-two years of age, of good physique, married, and the mother of one child two and a-half years old.

Her family history was negative. She had been well and strong until her confinement but at that time suffered laceration of both cervix and perineum, and had never since been well. She said she had never had a serious illness of any kind. At the time of my first visit she was complaining of loss of appetite, with considerable distress in the stomach after taking food, constipation, occasional pain in the region of the heart, and palpitation. There was no oedema, no complaint of dyspnoea, and no history of rheumatism or other fever. She was not confined to her bed but said she was so weak that she could not do much, and was liable to "weak spells" if she tried to walk even about the room.

Her tongue was broad and flabby and coated white, her temperature normal, the pulse small and rapid, about 100. Not having my stethoscope with me, I made no examination of the heart. My diagnosis, as expressed to the patient and her mother, was chronic catarrh of the stomach and a weak heart, but in my own mind I attributed her excessive lack of strength to nervous exhaustion, resulting from her pelvic injuries and poor assimilation. At my second visit I was in a hurry, and expecting to see her again

soon, did not take the time to explore the chest. I did, however, examine the abdomen, but found nothing except some tenderness in the region of the stomach. I had prescribed a laxative, powders of the subnitrate of bismuth and pure pepsin, and a tonic containing strychnia, put her upon a liberal but simple diet, and did not change or add to the treatment. This call was at about 5 o'clock in the afternoon. During the night the patient had an attack of pain and vomiting, and Dr. D. A. Payne was hastily summoned. He prescribed powders of morphia and bismuth which gave her relief. Between 4 and 5 o'clock in the morning she again complained of feeling badly, and asked for a glass of cold milk, which was given her. She drank a portion of it and fell back, dead. Dr. Payne was again called, but the patient was beyond resuscitation, and he immediately reported to me what had occurred during the night. At the autopsy, eight hours after death, rigor mortis was well marked.

On section it was found that the undertaker had perforated both abdomen and thorax and filled these cavities and their contained organs, as far as possible, with his preservative fluid. Even the heart had been entered by his instrument and his chemicals mixed with its blood. For this reason the examination was limited to the heart, kidneys and stomach.

The latter was found dilated, and its mucous membrane showed the usual appearances of chronic catarrhal inflammation. The kidneys were apparently quite normal, and no portions were taken for microscopical examination. Dr. Hektoen, who assisted me, kindly demonstrated the heart. It was of normal size, with somewhat flabby walls, containing a moderate amount of fat. The pericardium was apparently normal, and the semilunar valves competent to the water test. On section the myocardium of both ventricles was seen to be streaked with yellowish patches which the microscope showed to be areas of fibrous degeneration. The endocardium was apparently normal, save for several yellowish-white areas distributed over both ventricles. Upon opening the ascending aorta the orifice of but one coronary artery was seen, the right or anterior one, much reduced in size, and partly occluded by one division of a leaf-shaped, thrombotic body which had formed about the opening, and a portion of which can still be seen in the specimen, attached to the roughened surface of the aorta. You will also notice that the intima of the aorta, just above

the valves, is much thickened for a distance varying from one to two centimeters, and extending around nearly the entire circumference of the vessel, the upper margin of the thickened portion being well marked by an irregularly curved line.

At the point where we normally find the orifice of the left coronary artery it is especially thickened, as shown by an incision made in search of the artery. On opening the left coronary vessel in its course and diverting backward, the doctor came to a blind extremity, which can be demonstrated in the specimen, at a point behind and 3 or 4 m.m. outside of where it should open into the aorta. The aortic semilunar valves were slightly thicker than usual; the other valves of the heart seemed quite normal.

The anatomical diagnosis in this case, as I read it, was chronic gastric catarrh with dilatation; nodular or circumscribed arterio-sclerosis of the aorta causing obliteration of the posterior coronary artery and narrowing of the orifice of the anterior, followed by chronic fibrous myocarditis, the immediate cause of death being acute anæmia of the heart, due to sudden occlusion of the narrowed orifice of the sole remaining coronary vessel by a parietal thrombus of the aorta. I regret that I did not make a more thorough examination of this patient during life, but as Dr. Osler says, "the symptoms of myocardial disease are so notoriously uncertain," I might have said, even after the most careful examination, as I did at my first visit, that the patient had chronic gastric catarrh and a weak heart.

By the courtesy of Dr. Hektoen I am able to show you a second heart so similar to the one from my own patient as to be of almost equal interest. You will readily see in the aorta the same thickening of the intima, due to a similar circumscribed arterio-sclerosis.

The man was thirty-five years old, a book agent. He was walking along the street, sat down on a doorstep and died.

Post-mortem examination showed a good physique and fair nourishment. The right side of the heart was full of blood, the left was empty; the myocardium was pale and of normal consistence; no endocardial changes. In the right aorta was found a band of thickening in the intima about two centimeters wide, situated immediately above the aortic valves and involving the coronary orifices so as to reduce the lumen of the orifices to the size of a pin point. No

thrombosis in the coronary arteries, or other changes. The thickening in the aorta presented a smooth surface and was raised to the extent of four millimeters above the surface of the vessel, which presented slight atheromatous changes down as far as the origin of the iliac vessels. The other organs were normal.

DR. LUDVIG HEKTOEN: The most striking feature in connection with these specimens is the peculiar distribution of the endocarditis in the aorta, being, as you see, in both specimens a band extending completely around the vessel situated immediately above the aortic valve involving, in one specimen, both coronary openings, to such an extent as to practically close the anterior one and very largely limit the posterior, and in the second specimen, completely and permanently closing the posterior orifice and limiting the anterior until a thrombus excluded it. The complete closure of the posterior coronary orifice in Dr. Wescott's specimen is, I think, very unique. Another fact about Dr. Wescott's case that is interesting is the patient's age being only twenty-two years, which is an unusually early time for any of these changes in the vessels to develop. The other heart was taken from a man thirty-five years of age, which is also rather young. Dr. Crook, of London, has lately reported one case similar to these with narrowing of both orifices and final closure of one, at least, by parietal thrombosis. In his case the patient was suffering from secondary syphilitic symptoms at the time of death and there was found upon the aorta not a chronic endocarditis, as we see here, but an acute one, the process being demonstrated as acute by microscopic sections as well as from the appearance of the gross specimen, the appearance in the aorta being very similar to that of acute vegetative endocarditis. He closes his paper with the statement that when a bandlike formation like the ones we see in these specimens, are formed in young people, we have a right to infer that the origin of the disease is syphilitic. The most unique part of his specimen was the fact that the changes in the aorta were acute, not chronic as they are here.

DR. H. N. MOYER: What is the relation of this condition to sudden death?

DR. LUDVIG HEKTOEN: In the vast majority of cases sudden death has been demonstrated by various observers to be due to disease of the coronary vessels. One investigator demonstrated that over 60 per cent. of all the cases he observed of ordinary

sudden death, the only demonstrable cause of death was disease of the coronary vessels, most frequently in the course of the vessels rather than, as in these specimens, located at the orifice.

DR. H. N. MOYER: Would you in a given case of sudden death in which you found marked sclerosis of the coronary arteries, give an opinion that death was caused by that condition of the coronary arteries, in the absence of thrombosis?

DR. LUDVIG HEKTOEN: Yes; in the absence of other demonstrable causes.

DR. H. N. MOYER: I once saw a remarkable instance of sclerosis of the coronary arteries, but was unable to obtain a history of the case. They were found in a woman who had been murdered by stab wounds in the neck. When dissected out they could be bent slightly and would then break with a clean fracture, just as a pipe stem breaks. There was the most extreme degree of calcification of these arteries that I had ever seen. The heart muscles showed the chronic changes found in cases of endocarditis, the whitish appearance of the endocardium and the thickening of the intima of the aorta, but no obstruction at the mouth or in the course of the coronary arteries.

DR. HENRY M. LYMAN: Dr. Danforth showed me some time ago a heart illustrating beautifully the relation between the coronary artery and its branches and the portion of the heart muscle nourished by them. It was a case in which the coronary artery was diseased, but not throughout its whole extent; there was disease involving different branches, and those branches that were considerable sclerosed were surrounded by a portion of the muscle substance in an advanced state of degeneration; in other portions where the artery was in good condition there was comparatively healthy heart substance.

The question that Dr. Moyer brings up in regard to the condition of the heart if there is any slight arterio-sclerosis, I think is a question of degree entirely. I believe it is impossible to have disease of the coronary arteries of a sclerotic character that has advanced sufficiently to be recognized after death without a corresponding failure of the nutrition of the heart muscle.

DR. J. M. PATTON: This is a very interesting specimen. The peculiar absence of an opening for the coronary vessel on one side, together with the formation of a thrombus over the opening of the vessel on the other side, is rather unique.

The question brought up by Dr. Moyer as to sudden death is an interesting one, and I believe Dr. Hektoen is right when he says he would consider sclerosis of the coronary vessels a possible cause of death in the absence of thrombosis or embolism of those vessels; it might occur from cardiac ischæmia. It is a well known clinical fact that in cases of arterial sclerosis, whether of the coronary arteries or of the general system, there may be attacks of dyspnœa which might cause sudden death, or comparatively sudden, in an hour or two, and they are due to spasm of the arteries, and in a degenerated heart from coronary sclerosis, where the heart muscle has suffered from chronic ischæmia, the interference with its already scanty blood supply resulting from arterial spasm, might readily induce total functional inability of the organ. I think we give the credit to the heart in these cases a great many times when it is not due. It is very common to call all cases of sudden death heart disease, but sudden death rarely occurs in heart disease, except where the coronary vessels are involved. There is no reason why we should have sudden death in valvular disease of the heart, except in embolism of the coronary or cerebral arteries. Embolism of the cerebral arteries is a very rare condition: out of a hundred cases you will hardly run across one. In my practice I have only seen two cases of undoubted cerebral embolism occurring in valvular disease of the heart where I was absolutely certain as to the diagnosis. I think a great many deaths due to the heart occur in those cases of sclerosis of the coronary arteries, and may occur without thrombosis or embolism. Dr. Lyman is certainly right in saying that any degree of sclerosis of the coronary arteries means failure of nutrition of the heart muscle, and that opinion is borne out by the views of various eminent pathologists.

In regard to the cause of the various cardiac neuroses which are largely considered to be due to nutritive changes in the heart muscle which are the result of coronary sclerosis, it is difficult to make a diagnosis of such a condition in life, because you merely have evidence of a weak heart muscle, but it will be easy, associated with a diagnosis of chronic myocarditis to make a diagnosis of coronary sclerosis, inasmuch as you have evidence of general sclerosis, and can associate this condition in a general way with the other.

DR. A. H. FOSTER : I would ask what is the present relation between angina pectoris and coronary trouble ?

DR. J. M. PATTON: Opinion is divided on that question, a number of writers on that subject still hold to the theory of coronary sclerosis in all cases of true angina pectoris, others claim that it may occur in any case of myocardiac degeneration, especially those cases that are fibroid in character, general fibroid degeneration of the heart muscle, and as that condition is so often associated with coronary sclerosis, it is difficult to separate the two. Some again claim that it is associated with disease of the cardiac ganglia.

DR. HENRY M. LYMAN: I wish Dr. Wescott would tell us whether there was any connection between these cases and previous syphilitic disease. This subject of syphilis of the heart is becoming quite interesting; there have been quite a number of cases referred to syphilis of the connective tissue of the heart, syphilitic carditis and the like, which have been greatly benefited by iodide of potassium and antisymphilitic treatment.

DR. C. D. WESCOTT: As I stated in my paper, the history of my patient was very unsatisfactory. She seemed to be rather feeble-minded and what I did get from her and her mother was by a process of pumping. Without asking any leading questions, I tried to investigate the matter of syphilis, but got no reply from her that would indicate that she had had such trouble, and my examination of her during life revealed no evidence whatever, and we came across nothing in the post-mortem that would indicate any more positively than the condition of these vessels indicate that she had syphilis. The history of Dr. Hektoen's case was practically unknown, the man was found dead on a doorstep where he sat down to rest a moment. My case is in a way disappointing. I am sorry I could not make it more complete as to history and physical examination. The fact that this woman had a living child that appeared perfectly well, would contraindicate syphilis, although not positively.

I have nothing more to add to what has already been said, except to thank the members for their interest and discussion of the case.

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